

### **REMARKS**

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of October 24, 2002 is respectfully requested.

The Examiner has requested the Applicants' cooperation in reviewing the specification and correcting any errors of which the Applicants may become aware in the specification. Due to the lengthy specification, this review is ongoing, and all of the amendments have not yet been incorporated into the specification. However, a supplemental amendment including all of the amendments will be submitted as soon as possible, and the Examiner's cooperation in this regard is greatly appreciated.

The Examiner has rejected claims 4-6 and 25-26 under 35 USC §112, second paragraph, as being indefinite. In particular, the Examiner asserts that several of the phrases recited in the claims are indefinite and confusing. In addition, the Examiner has also objected to claim 6 and 25-26 due to various other informalities. In view of the Examiner's objections and rejections based on the form of the original claims, the original claims have been canceled and replaced with new claims 74-80. It is submitted that all of the new claims read on the elected invention of Group I, and Species 2. Furthermore, it is submitted that these claims have been drafted so as to fully comply with all of the requirements of 35 USC §112. Therefore, it is submitted that the Examiner's objections and rejections under §112 are not applicable to the new claims.

The Examiner has rejected original independent claim 1 as being unpatentable over the Iketaki reference (USP 5,835,262) in view of the Fairley reference (USP 5,783,814). However, the Examiner has indicated that claims 3-6 and 25-26 contain allowable subject matter. As indicated above, the original claims have been canceled and replaced with new claims 74-80. In this regard, new independent claim 74 corresponds to original independent claim 1, but the subject matter of original claim 1 has been slightly modified so as to clarify the distinctions between the present invention and the prior art. In addition, new dependent claims 75-80 correspond to original dependent claims 3-6, 25, and 26, which the Examiner indicated contain allowable subject matter. For the reasons discussed below, it is respectfully submitted that claims 74-80 are clearly patentable over the prior art of record.

New independent claim 74 is directed to a double-resonance absorption microscope, comprising a pump light source for emitting a pump light, an erase light source for emitting an erase light, an overlap component for partially overlapping irradiating areas of the pump light and the erase light with each other, and a spatial filter *located on an optical path of the erase light to be emitted from the erase light source*. The spatial filter includes a condenser lens, a collimate lens, and a pinhole located between the condenser lens and the collimate lens. The condenser lens, the collimate lens, and the pinhole are arranged so as to condense the erase light into the pinhole, to collimate the erase light having passed through the pinhole into a parallel beam, and *to suppress wavefront disturbance of the erase light for producing a first-order Bessel beam from the erase light*.

As explained in the specification, a first-order Bessel beam is formed of erase light that is ideal for a double-resonance absorption microscope. However, in order to form the first-order Bessel beam, it is necessary to remove any light having a disturbed wavefront from the erase light. As explained on page 26, line 21 through page 30, line 19 of the original specification with reference to Fig. 12, the condenser lens, the collimate lens, and the pinhole of the spatial filter are arranged to prevent light that produces a phase difference exceeding a maximum phase difference from entering through the pinhole of the spatial filter. As a result, only light that is uniform in wavefront can pass through the pinhole so that the spatial filter suppresses wavefront disturbance and produces a first-order Bessel beam from the erase light. Of course, in order to produce this result, the spatial filter must be *located on the optical path of the erase light*, as also recited in new independent claim 74.

The Iketaki reference discloses a multi-wavelength optical microscope but, as the Examiner has acknowledged, does not disclose a spatial filter having a condenser lens, a collimate lens, and a pinhole. Nonetheless, the Examiner asserts that the Fairley reference discloses a spatial filter with these components.

However, the Fairley reference is directed to a method and apparatus for automatically focusing a microscope, and discloses a microscope that uses only one laser beam, and that has a spatial filter for improving the S/N ratio of the light reflected from a sample. However, the

Fairley reference does not disclose or even suggest arranging a condenser lens, a collimate lens, and a pinhole of a spatial filter so as to suppress wavefront disturbance of the erase light to produce a first-order Bessel beam from the erase light. Moreover, because the Fairley reference discloses only one light source, the Fairley reference clearly does not disclose or suggest positioning the spatial filter on an optical path of *erase* light.

As explained above, the Iketaki reference does not disclose or suggest a spatial filter. In addition, the Fairley reference does not disclose or even suggest a spatial filter *located on an optical path of erase light to be emitted from an erase light source*, and a spatial filter that includes a condenser lens, a collimate lens, and a pinhole *arranged to suppress wavefront disturbance of the erase light for producing a first-order Bessel beam from the erase light*. Therefore, one of ordinary skill in the art would not be motivated to modify or combine the Iketaki reference and the Fairley reference so as to obtain the invention recited in new independent claim 74. Accordingly, it is respectfully submitted that new independent claim 74 and the claims that depend therefrom are clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

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